

plished by fitting the horizontal circle with a six-minute vernier, and, in the case of the vertical circle, by depending upon the magnification, aided by the lower cross-hair member, for estimating the tenths.

One may infer that a certain agility will be required of the operator in using two eyes at different tasks almost simultaneously. This should be by no means an insuperable obstacle to the usefulness of the new one-man theodolite.

In the instrument described, the diameter of the objective is 36 millimeters, magnification 10 times, and field of view  $5.5^\circ$ .—*B. M. V.*

#### ESTABLISHMENT OF METEOROLOGICAL STATIONS IN MONGOLIA

(Translated from Petermann's Mitteilungen, 1926, Heft 1/2)

\* \* \* Dr. W. B. Schostakowitsch, director of the Meteorological and Magnetic Observatory at Irkutsk, has been establishing during the last two years a meteorological observing service in Mongolia under commission from the Mongolian Government.

In addition to the meteorological observatory at Urga (in Mongolian: Ulan Bator Choto) ( $47^\circ 55' N.$ ,  $106^\circ 50' E.$ ) there are at present seven stations:

Uljassutai ( $47^\circ 44' N.$ ,  $96^\circ 52' E.$ ).

Wangin ( $49^\circ 28' N.$ ,  $98^\circ 51' E.$ ).

Chatyl ( $50^\circ 30' N.$ ,  $100^\circ 32' E.$ ) at the south end of the Kossogol.

Dsain Schabi ( $47^\circ 46' N.$ ,  $101^\circ 03' E.$ ).

Sangin ( $47^\circ 52' N.$ ,  $106^\circ 48' E.$ ).

Ude ( $44^\circ 35' N.$ ,  $111^\circ 10' E.$ ).

San Reisse ( $48^\circ 00' N.$ ,  $112^\circ 42' E.$ ).

All the stations were established with the support of the Central Geophysical Observatory at Leningrad.

The stations at Urga and Ude were already in existence, and for the period 1894–1903 had furnished valuable observations. From Uljassutai there are only the few observations of H. Fritsche for 1879–80. All the other stations are quite new and of the greatest importance for our future enlightenment as to the climate of northern Mongolia, now known only in bare outline. With the exception of Ude and San Reisse, all the stations lie in the Changai Mountains region, and it is very much to be desired that the town of Kobdo, from which we have complete observations only for 1896 and for scattered months in 1895 and 1897, should be included in the net of stations.

At the Urga Observatory, modern registering apparatus such as barographs, thermographs, hygrographs, and heliographs are in use, and a Michelson actinometer. Beginning with October of this year, study of the upper air currents with pilot balloons was begun.

Through the observations of this new, albeit wide-meshed net, we have now a good basis for following into Mongolia the cold and warm waves in thin surface layers of air, which, originating over the northern ice-covered sea and spreading thence eastward and westward, H. von Ficker has traced as far as the western edge of the Russian Altai Mountains, even to Barnaul. From von Ficker we have the newest and most comprehensive description of the climate of central Asia. (Geogr. Ann., 1923, pp. 351–400.)

In the course of the next year the work of the stations will be extended to include magnetic and seismic observations. \* \* \* —*Paul Fickeler, Munich.*

#### METEOROLOGICAL SUMMARY FOR SOUTHERN SOUTH AMERICA, AUGUST, 1926

By J. BUSTOS NAVARRETE, Director

[Observatorio del Salto, Santiago, Chile]

The month of August was relatively dry, the atmospheric régime in the central zone being characterized by stability and continuity. During the first seven days the régime was a high-pressure one, with cloudy weather and cold in the central zone, and some drizzle and scattered rains in the south.

Between the 8th and the 11th an important depression influenced the country, causing general bad weather. On the 11th it rained from Coquimbo to Chiloe, the maximum precipitation being registered at Punta Tumbes, 100 millimeters.

Between the 12th and the 17th the high-pressure régime was reestablished, causing the fine weather to continue. On the 18th and 19th a rather important depression affected the central zone, causing cloudiness, fog, and drizzle. Then followed another period of good weather from the 20th to the 24th. On the 25th and 26th a large depression crossed the far southern region, causing bad weather and rains in the southern zone. Precipitation exceeded 30 millimeters. Between the 28th and 30th another depression crossed the far south. Rain fell from Aconcagua to Chiloe; 24-hour rainfall up to 50 millimeters was registered. In the southern zone this storm was a violent one.—*Transl. B. M. V.*

#### METEOROLOGICAL SUMMARY FOR BRAZIL, AUGUST, 1926

By FRANCISCO SOUZA, Acting Director

[Directoria de Meteorologia, Rio de Janeiro]

The secondary circulation during August was less active than in July; the anticyclones moved along less meridional paths but were still very extensive. Four highs invaded southern Brazil, while the continental depression and those of high latitudes were especially active, principally on the 10th, 11th, and 21st, there forming on this latter date over the Argentine littoral in the latitude of Mar del Plata a secondary that produced very strong winds which reached the southern part of Brazil.

Rains in the north were generally scant, averaging 30 millimeters below normal. In the central and southern regions irregular precipitation was observed, which departed little from the normals.

The harvesting of cotton was practically finished; yields in the north did not meet expectations. The coffee harvest is about ended and has produced a normal yield. The yields of cane have been good, and rains in the north favored tillage and the new planting, as they did also in the central region. Tobacco has yielded well, and the new planting is in process.

The weather at Rio was in general good, with little cloud except from the 17th to the 19th and the 23d to the 27th, which were unsettled. The month was mildly warm, though the nights were a little cooler than normal for August. The mean temperature and the mean maximum were slightly above their normals, the mean minimum slightly below. Rains were abundant in the third decade, being 58 millimeters above the normal. Winds were prevailing southerly and of moderate velocity, except that there occurred in the early morning of the 24th a squall from south-southwest which attained a maximum velocity of 19.9 m. p. s. at 12.45 a. m.—*Translation, W. W. R. and B. M. V.*